



DIVISION OF CONSOLIDATED LABORATORY SERVICES

**PROTOCOL FOR THE CERTIFICATION OF LABORATORIES
PERFORMING MICROBIOLOGICAL ANALYSIS OF DRINKING
WATER UNDER THE SAFE DRINKING WATER PROGRAM**

MAY 2005

**CERTIFICATION OF LABORATORIES
PERFORMING MICROBIOLOGICAL ANALYSIS OF DRINKING WATER
UNDER THE SAFE DRINKING WATER PROGRAM**

Signatures

Date

Prepared by: _____
Eileen Q. Sanders
Certification Officer, DCLS

Revised: _____

Approved by: _____
A. Grier Mills
Director, Bureau of Customer Services

ANNUAL REVIEW

Signature

Date

Reviewed by: _____

Reviewed by: _____

Reviewed by: _____

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PROTOCOL FOR THE CERTIFICATION OF LABORATORIES PERFORMING MICROBIOLOGICAL ANALYSIS OF DRINKING WATER UNDER THE SAFE DRINKING WATER PROGRAM

I. PURPOSE

The purpose of this protocol is to prescribe certification criteria for laboratories performing microbiological analysis of drinking water under Chapter 40, Section 10 through 370 of the Code of Virginia.

II. SCOPE

Laboratories will be inspected at least once every three years by the Division of Consolidated Laboratory Services (DCLS).

III. REQUIREMENTS FOR INITIAL CERTIFICATION

1. Initial Application - Requests for certification will be made to DCLS in writing. DCLS will send an application packet to each requesting laboratory.
2. The laboratory will submit a Quality Assurance Plan with the application packet. The following will be addressed in the QA Plan:
 - a. Standard Operating Procedures: Summary of analytical methods and quality control tests being performed, equipment being used, written step-by-step procedures being followed, and references.
 - b. List of personnel.
 - c. List of equipment.
 - d. Written procedure describing the laboratory's protocol for reporting compliance sample results.
3. The laboratory will submit sampling information and test results for at least twenty analyses for each method for which the laboratory seeks certification. The laboratory will submit results of one proficiency sample test set for each method for which the laboratory seeks certification.
4. Application Review - The application packet and the QA Plan will be reviewed by the DCLS Certification Officer. Based on the review of the

application, one of the following responses will be initiated:

- a. Return the application along with a letter identifying the additional corrections that are required.
- b. Contact the laboratory by telephone to correct minor problems or obtain clarification. Initial and date the changes in the application agreed to by the laboratory. This may be done by Fax, as long as a clear copy is received by mail.

IV. FEE

Fees are currently waived for state, local, and federal government laboratories.

Commercial laboratories must pay an application fee of two hundred and fifty dollars (\$250.00), payable to the Treasurer of Virginia. The fee must accompany the application packet and is non-refundable. The laboratory will mail the check to: Attn.: Cashier, DGS Fiscal Services, P.O. Box 267, Richmond, VA 23202-0267. A certification renewal fee of two hundred and fifty dollars (\$250.00) is payable every year.

V. ON-SITE INSPECTION AND REPORT

An on-site inspection is scheduled after the laboratory has successfully completed the requirements for certification. The laboratory personnel, operations, equipment, supplies, sample handling procedures, methodology, written procedures and records will be inspected. Laboratory personnel will be asked to demonstrate drinking water microbiology methods during each on-site inspection. Following each on-site inspection a comprehensive report will be prepared by the DCLS Certification Officer. The inspection report will document any deficiencies and offer recommendations. The laboratory seeking certification has sixty (60) days to reply to the deficiencies on the report.

An on-site inspection will be conducted at each laboratory at least once every three years. DCLS reserves the right to perform interim announced and/or unannounced inspections. If on-site inspections are refused, DCLS may revoke certification.

VI. CERTIFICATE

A certificate is issued for a three-year period for each certified state, local, or federal government laboratory.

A certificate is issued annually for each commercial laboratory.

VII. MAINTENANCE OF CERTIFICATION

The laboratory must notify DCLS within thirty (30) days of changes in personnel, procedures, equipment or laboratory location. To maintain certification, the laboratory must continue to meet the requirements listed in the *Regulations for the Certification of Laboratories Analyzing Drinking Water*.

VIII. RENEWAL OF CERTIFICATION

The annual certification period for commercial laboratories is July through June. Renewal invoices will be sent out to commercial laboratories three months before the expiration of the certificate. Payment is due at least one month before the certification anniversary date. Failure to remit payment on time will delay re-certification and may result in revocation of certification.

State, local, and federal government laboratories have a three year certification period. The triennial period begins on the month of the initial inspection of the laboratory.

IX. APPENDICES

- A. Application Packet
- B. On-site Inspection Checklist
- C. On-Site Inspection/Certification Letters
 - Letter 1 – Notification of On-site Inspection
 - Letter 2 - On-site Inspection Report Cover Letter
 - Letter 3 - Certification Renewal Fee Document

APPENDIX A

DGS-21-109

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INITIAL CERTIFICATION REQUIREMENTS FOR VIRGINIA LABORATORIES SAFE DRINKING WATER PROGRAM

As stated in Part 1, Section 1.8., Update on regulations, on page 1-3 of the Virginia *Regulations for the Certification of Laboratories Analyzing Drinking Water*, whenever the USEPA adopts a new *Manual for the Certification of Laboratories Analyzing Drinking Water*, certified laboratories shall comply with the USEPA updated manual. The EPA *Manual*, 5th Edition, is document number EPA 815-R-05-004 dated January 2005. You may print it from the EPA Web site at www.epa.gov/safewater/labcert/labindex.html. You may also order a copy from the National Technical Information Service at 800-553-6847 or www.ntis.gov. The NTIS order number is PB2005-104921.

Check only those parameters on the application for which you currently have the necessary equipment and personnel to perform the analysis. Additional parameters may be added in the future. The status of certification will depend on the on-site inspection and successful completion of proficiency test sample(s).

The on-site inspection, certification and monitoring of local government and federal laboratories will be made free of charge. For other laboratories, e.g. private, commercial and industrial, the Division will charge an annual fee for the following categories:

<u>Categories</u>	<u>Annual Fee</u>
Microbiology	\$250.00
Inorganic Chemical	\$280.00
Organic Chemical	\$280.00
Radiochemical	\$250.00

The annual period is from July 1 to June 30. The annual fee is not prorated and is payable to the Treasurer of Virginia. To insure proper handling, please mail the check to:

ATTN: Cashier
Commonwealth of Virginia
DGS Fiscal Services
P.O. Box 267
Richmond, VA 23202-0267

Mail all certification data to the Laboratory Certification Section at 600 North 5th Street, Richmond, VA, 23219-3691. If you any questions, please call 804-648-4480.

APPENDIX A (cont.)

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APPLICATION FOR CERTIFICATION SAFE DRINKING WATER PROGRAM

1. Does your laboratory presently test drinking water for a public water system? Yes__No __
2. Identify water system(s) served: _____
3. Indicate below the parameters for which approval is being requested:

MICROBIOLOGY

TOTAL COLIFORM: Presence/Absence Test _____	FECAL COLIFORM: EC Medium _____
ONPG-MUG (Colilert) Test _____	<i>E. COLI</i> : ONPG-MUG (Colilert) _____
Membrane Filter Test _____	Colisure _____
Colisure Test _____	EC Medium+MUG _____
Fermentation Test _____	Nutrient Agar+MUG _____
m-ColiBlue24 _____	m-ColiBlue24 _____
E*Colite _____	E*Colite _____
Membrane Filter w/ MI Agar _____	Membrane Filter w/ MI Agar _____
ReadyCult Coliforms 100 P/A Test _____	ReadyCult Coliforms 100 P/A Test _____
Membrane Filter w/ Chromocult Agar _____	Membrane Filter w/ Chromocult Agar _____
Colitag _____	Colitag _____

INORGANIC

TRACE METALS 1

____ LEAD
____ COPPER

TRACE METALS 2

____ ARSENIC
____ BARIUM
____ CADMIUM
____ CHROMIUM
____ MERCURY
____ SELENIUM

TRACE METALS 3

____ ANTIMONY
____ BERYLLIUM
____ NICKEL
____ THALLIUM

TRACE METALS 4

____ ALUMINUM
____ CALCIUM
____ IRON
____ MANGANESE
____ MOLYBDENUM
____ SILVER
____ SODIUM
____ VANADIUM
____ ZINC

NON-METALS

____ ASBESTOS
____ CHLORIDE
____ CYANIDE
____ FLUORIDE
____ NITRATE
____ NITRITE
____ ORTHOPHOSPHATE
____ SULFATE

OTHER PARAMETERS

____ ALKALINITY
____ CONDUCTIVITY
____ CORROSIVITY
____ CALCIUM HARDNESS
____ HARDNESS
____ pH
____ TOTAL DISSOLVED SOLIDS
____ TURBIDITY

APPENDIX A (cont.)

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ORGANIC

☐ PESTICIDES
☐ HERBICIDES
☐ PCB's

☐ TRIHALOMETHANES
☐ VOLATILE ORGANIC CHEMICALS
☐ SYNTHETIC ORGANIC CHEMICALS

RADIOLOGICAL

☐ GROSS ALPHA
☐ GROSS BETA
☐ IODINE 131
☐ RADIUM-226
☐ RADIUM-228

☐ STRONTIUM-89
☐ STRONTIUM-90
☐ TRITIUM
☐ URANIUM
☐ PHOTON EMITTERS

4. Does your laboratory have a Quality Assurance Plan and written analytical procedures?
Yes ☐ No ☐ (IF YES SEND COPY).
5. Provide below any additional information that will aid in evaluating your laboratory's capabilities.

Date: _____

Organization: _____

Address _____

Telephone Number: _____

Laboratory Director: _____

Contact Person and Title: _____

Email address _____

Complete and return to: LABORATORY CERTIFICATION SECTION
CUSTOMER SERVICES AND PLANNING GROUP
DIVISION OF CONSOLIDATED LABORATORY SERVICES
600 NORTH 5TH STREET
RICHMOND, VIRGINIA 23219-3691

**COMMONWEALTH OF VIRGINIA
DEPARTMENT OF GENERAL SERVICES
DIVISION OF CONSOLIDATED LABORATORY SERVICES
LABORATORY CERTIFICATION SECTION
SAFE DRINKING WATER PROGRAM
LABORATORY PERSONNEL LIST**

Date: _____

[illegible]

APPENDIX A (cont.)

DIVISION OF CONSOLIDATED LABORATORY SERVICES SAFE DRINKING WATER PROGRAM

LABORATORY _____ DATE _____

MICROBIOLOGY EQUIPMENT AND SUPPLIES

ITEM MAKE AND MODEL

1. AUTOCLAVE _____
2. BALANCE _____
3. COLONY COUNTER FOR PLATE COUNTS _____
4. CONDUCTIVITY METER _____
5. HOT AIR OVEN _____
6. INCUBATOR _____
7. MEMBRANE FILTER UNIT _____
 - A. FILTERS _____
8. MF COLONY COUNTING EQUIPMENT
 - A. MICROSCOPE (10X - 15X) _____
 - B. FLUORESCENT LIGHT SOURCE _____
9. pH METER _____
10. **LIQUID IN GLASS** REFERENCE THERMOMETER
(NIST OR EQUIVALENT GRADUATED INTO AT
LEAST 0.2°C INCREMENTS) _____
11. WATER SAMPLE COLLECTION CONTAINERS _____
11. SOURCE OF LAB PURE WATER
(STILL OR DEMINERALIZER) _____
12. WATER BATH _____
13. ULTRAVIOLET LAMP _____

CIRCLE THE MEDIA YOU ARE CURRENTLY USING. INCLUDE BRAND NAME AND LOT NUMBERS.

1. STANDARD PLATE COUNT AGAR _____
2. LAURYL TRYPTOSE/SULFATE BROTH _____
3. BRILLIANT GREEN LACTOSE BILE BROTH _____
4. M-ENDO LES AGAR _____
5. EC MEDIUM _____
6. M-ENDO BROTH _____
7. TRYPTIC SOY BROTH _____
8. P/A BROTH _____
9. EC+MUG MEDIUM _____
10. NUTRIENT AGAR+MUG _____
11. SIMPLATE MEDIA _____
12. ONPG-MUG (Colilert) MEDIA _____
13. COLISURE MEDIA _____
14. M-COLIBLUE 24 BROTH _____
15. E*COLITE MEDIA _____

16. MI AGAR _____

18. CHROMOCULT AGAR _____

17. READYCULT MEDIA _____

19. COLITAG MEDIA _____

APPENDIX B

Inspection Checklist

The “Microbiology Laboratory Analysis Review Checklist” may be found in Chapter Five of the USEPA *Manual for the Certification of Laboratories Analyzing Drinking Water*, January 2005, Fifth Edition.

APPENDIX C

Letter 1 – Notification of On-site Inspection

DATE

CONTACT PERSON
LABORATORY NAME
ADDRESS
CITY STATE ZIP

Dear CONTACT PERSON:

Your laboratory is scheduled for evaluation in Microbiology for recertification under the requirements of the Safe Drinking Water Act. I will conduct the on-site inspection on DATE starting at approximately TIME. Certification compliance will be evaluated for METHOD NAME(S).

If you would like to have your laboratory considered for recertification, please complete the enclosed forms referencing personnel and equipment and return them within 10 days of receipt of this correspondence.

Sincerely,

Eileen Q. Sanders
Certification Officer
(804) 648-4480, ext 383
(804) 692-0416 (fax)
Eileen.Sanders@dgs.virginia.gov

APPENDIX C (cont.)

Letter 2 – On-site Inspection Report Cover Letter

DATE

CONTACT PERSON

LAB NAME

ADDRESS

CITY, VA ZIP

Dear CONTACT PERSON:

Enclosed is a copy of the on-site evaluation report for the LAB NAME, conducted on DATE, in accordance with the provisions of the *Virginia Regulations for the Certification of Laboratories Analyzing Drinking Water* and the 5th Edition of the *USEPA Manual for the Certification of Laboratories Analyzing Drinking Water*.

This report addresses the deviations found in microbiology. All deviations are included under the broad headings of Laboratory Equipment and Supplies; General Laboratory Practices; Sample Collecting, Handling and Identification; and Methodology.

Comments on specific deviations are listed under the broad headings. If no specific entries are made under such headings, no deviations were observed at the time of the on-site inspection.

The status of your laboratory as a result of the on-site inspection is:

CERTIFIED

for

TOTAL COLIFORM: TEST

FECAL COLIFORM/*E. COLI*/TEST AND HETEROTROPHIC PLATE COUNT

Effective MONTH, YEAR through MONTH, YEAR

Your Laboratory I.D. Number is 00000

APPENDIX C (cont.)

Letter 2 – On-site Inspection Report Cover Letter (cont.)

CONTACT PERSON

DATE

Page 2

A letter to confirm and document the corrections of the listed deviations must be received by this office within sixty (60) days after receipt of this correspondence. Include copies of laboratory records or other documentation that verifies that each deviation was satisfactorily corrected. To maintain certification, your laboratory must continue to meet the requirements listed in the *Regulations*. We reserve the option to conduct unscheduled on-site evaluations of all laboratories certified under the Safe Drinking Water Program.

We will be pleased to assist you where possible with any technical problems that you may have. If you desire such assistance, please contact Eileen Q. Sanders at (804) 648-4480, ext. 383 or Eileen.Sanders@dgs.virginia.gov.

Sincerely yours,

James L. Pearson, Dr. P. H., BCLD
Director, Virginia Laboratory Officer
Safe Drinking Water Program

Enclosure

APPENDIX C (cont.)

Letter 4 - Certification Renewal Fee Document

DATE

CONTACT PERSON
LABORATORY NAME
ADDRESS
CITY STATE ZIP

Dear CONTACT PERSON:

LABORATORY NAME is a certified laboratory under the Safe Drinking Water Program (SDWP) in the Commonwealth of Virginia. A laboratory under the SDWP is required to pay an annual fee for the category for which it desires certification. The following are the categories: Microbiology, Inorganic Chemical, Organic Chemical and Radiochemical.

According to our records your laboratory is certified for the following category(s):

<u>Categories</u>	<u>Annual Fee</u>
_____ Microbiology	\$250.00
_____ Inorganic Chemical	\$280.00
_____ Organic Chemical	\$280.00
_____ Radiochemical	\$250.00

Your annual fee will be \$XXX.XX. Make the check payable to the Treasurer of Virginia. Please enclose a copy of this letter with your check. To insure proper handling, please mail the check before June 1, 200__ to:

ATTN: CASHIER
COMMONWEALTH OF VIRGINIA
DGS FISCAL SERVICES
P.O. BOX 267
RICHMOND, VA 23202-0267

APPENDIX C (cont.)

Letter 4 - Certification Renewal Fee Document (cont.)

May 24, 2002

CONTACT PERSON

If we do not hear from you by June 1, 200_, your laboratory will not be included in the list of approved laboratories in Virginia commencing July 200_.

If you have any questions concerning this matter, please contact me at 804-648-4480.

Very truly yours,

R. Tracy Hunter
Certification Officer
Safe Drinking Water Program